

**Amendments to the Claims:**

The listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims**

1-234 (Cancelled.)

235. (New) An isolated nucleic acid sequence which encodes a human hT1R2 taste receptor which when expressed in association with a nucleic acid sequence encoding the human T1R3 polypeptide contained in SEQ ID. NO: 4 produces a heteromeric sweet taste receptor (hT1R2/hT1R3) that specifically responds to sweet taste stimuli, wherein said hT1R2 nucleic acid sequence is selected from the following:

(i) a nucleic acid sequence which encodes the human T1R2 polypeptide contained in SEQ ID NO: 21;

(ii) a nucleic acid sequence encodes a polypeptide having at least 90% sequence identity to the human T1R2 polypeptide contained in SEQ ID NO: 21;

(iii) a nucleic acid sequence which hybridizes to the human T1R2 encoding nucleic acid sequence contained in SEQ ID NO: 20 under stringent hybridization conditions which consist of hybridization in 50% formamide, 5xSSC and 1% SDS, incubating at 42°C, with wash in 0.2 x SCC and 0.1% 5DS

at 65°C, wherein said hybridization and wash steps are each carried out for at least 1 minute; and

(iv) the nucleic acid sequence encoding a human T1R2 polypeptide having the sequence contained in SEQ ID NO: 20.

236. (New) The human T1R2 nucleic acid sequence claim 235 which encodes the human T1R2 polypeptide contained in SEQ ID NO: 21.

237. (New) The human T1R2 nucleic acid sequence of Claim 235 which encodes a human T1R2 polypeptide which possesses at least 90% sequence identity to the human T1R2 polypeptide contained in SEQ. ID NO: 21.

238. (New) The human T1R2 nucleic acid sequence of Claim 235 which encodes a human T1R2 polypeptide which possesses at least 95% sequence identity to the human T1R2 polypeptide contained in SEQ ID NO: 21.

239. (New) The human T1R2 nucleic acid sequence of Claim 235 which encodes a human T1R2 polypeptide which possesses at least 96% sequence identity to the human T1R2 polypeptide contained in SEQ ID NO: 21.

240. (New) The human T1R2 nucleic acid sequence of Claim 235 which encodes a human T1R2 polypeptide which possesses at least 97% sequence identity to the human T1R2 polypeptide contained in SEQ ID NO: 21.

241. (New) The human T1R2 nucleic acid sequence of Claim 235 which encodes a human T1R2 polypeptide which possesses at least 98% sequence identity to the human T1R2 polypeptide contained in SEQ ID NO: 21.

242. (New) The human T1R2 nucleic acid sequence of Claim 235 which encodes a human T1R2 polypeptide which possesses at least 99% sequence identity to the human T1R2 polypeptide contained in SEQ ID NO: 21.

243. (New) The human T1R2 nucleic acid sequence of Claim 235 which encodes a human T1R2 polypeptide which possesses greater than 99% sequence identity to the human T1R2 polypeptide contained in SEQ ID NO: 21.

244. (New) The human T1R2 nucleic acid sequence of claim 235 which is a genomic sequence.

245. (New) The human T1R2 nucleic acid sequence of claim 235 which is a cDNA.

246. (New) The human T1R2 sequence of claims 235 which is an isolated mRNA.

247. (New) The human T1R2 nucleic acid sequence of claim 235 which is operably linked to a nucleic acid sequence that facilitates the transcription of said human T1R2 nucleic acid sequence.

248. (New) The human T1R2 nucleic acid sequence of claim 235 which is operably linked to a sequence that facilitates the surface expression of human T1R2 polypeptide by a host cell containing said nucleic acid sequence.

249. (New) The human T1R2 nucleic acid sequence of claim 248 wherein said sequence that facilitates surface expression is from a mammalian rhodopsin gene.

250. (New) The human T1R2 nucleic acid sequence of claims 235 which is contained on a nucleic acid sequence that further comprises a nucleic acid sequence which encodes a detectable marker.

251. (New) The human T1R2 nucleic acid sequence of claim 250 wherein said detectable marker is a green fluorescent protein.

252. (New) The human T1R2 nucleic acid sequence of claim 235 which is operably linked to a constitutive promoter.

253. (New) The human T1R2 nucleic acid sequence of claim 235 which is operably linked to a regulatable promoter.

254. (New) A human T1R2 nucleic acid sequence according to claim 235 which is comprised on a nucleic acid construct that further comprises a nucleic acid sequence encoding a G protein.

255. (New) The human T1R2 nucleic acid sequence of claim 254 wherein said G protein is selected from the group consisting of  $G_{\alpha 15}$ ,  $G_{\alpha 16}$ , gustducin and transducin and chimeras thereof..
256. (New) A human T1R2 nucleic acid sequence according to claim 235 which is contained on a DNA construct that encodes a G protein coupled receptor (GPCR) other than human T1R2.
257. (New) The vector of claim 256 which is a plasmid.
258. (New) The vector of claim 256 which is a viral vector.
259. (New) The vector of claim 256 which comprises a gene encoding a detectable marker.
260. (New) The vector of claim 256 wherein said human T1R2 nucleic acid sequence is operably linked to a promoter.
261. (New) The vector of claim 260 wherein said promoter is constitutive.
262. (New) The vector of claim 260 wherein said promoter is regulatable.
263. (New) The vector of claim 256 wherein said human T1R2 nucleic acid sequence is operably linked to a nucleic acid sequence that encodes a polypeptide that facilitates the surface expression of said human T1R2 polypeptide in a host cell containing the vector.

264. (New) The vector of claim 263 wherein said polypeptide that facilitates surface expression is a mammalian rhodopsin polypeptide.

265. (New) The vector of claim 264 wherein said mammalian rhodopsin is bovine rhodopsin.

266. (New) The vector of claim 256 which further comprises a nucleic acid sequence encoding a G protein.

267. (New) The vector of claim 266 wherein said G protein is selected from the group consisting of  $G_{\alpha 15}$ ,  $G_{\alpha 16}$ , gustducin and transducin and chimeras thereof.